54

We claim:

1. A compound of formula (I)

wherein

each of X_1 , X_2 , X_3 , X_4 , X_5 , X_6 , X_7 , X_8 , X_9 and X_{10} is C, CH, or N; provided that each of rings A or B has no more than 2 nitrogen atoms;

E is O or N; provided that when E is O, R⁶ is absent from E-R⁶; and further provided that when E is O and R⁶ is absent, then W is not NR⁷;

W is O or NR^7 :

v is 1, 2, or 3;

 R^1 and R^2 are independently selected from hydrogen, C_1 - C_8 alkyl, C_2 - C_8 alkenyl, C_2 - C_8 alkynyl, C_3 - C_8 cycloalkyl, aryl, C_1 - C_{10} alkylaryl, $C(O)C_1$ - C_8 alkyl, $CO(O)C_1$ - C_8 alkyl, SO_2C_1 - C_8 alkyl, SO_2C_1 - C_1 0 alkylaryl, C_1 - C_8 alkylheterocyclic, SO_2C_1 - C_8 alkylheterocyclic, C_1 - C_{10} alkylcycloalkane, C_1 - C_8 alkoxyalkyl, $(CH_2)_nC(O)OR^8$, $(CH_2)_nC(O)R^8$, $(CH_2)_mC(O)NR^8R^8$, and $(CH_2)_mNSO_2R^8$; wherein each of the alkyl, alkenyl, cycloalkyl, heterocyclic and aryl groups are optionally substituted with one to five groups independently selected from oxo, C_1 - C_8 alkyl, C_2 - C_8 alkenyl, phenyl, C_1 - C_8 alkylaryl, $C(O)C_1$ - C_8 alkyl, $CO(O)C_1$ - C_8 alkyl, C_1 - C_8 alkoxy, C_1 - C_8 alkyl, C_1 - C_8 alkylaryl, C_1 - C_8 alkylheterocyclic, C_1 - C_1 0 alkylcycloalkane, C_1 - C_1 0 alkylcycloalkane, C_1 - C_2 0 alkylaryl, C_1 - C_3 0 alkylaryl, C_1 - C_4 0 alkylcycloalkane, C_1 - C_4 0 alkylcycloalk

 R^3 and R^3 ' are each independently selected from hydrogen, C_1 - C_8 alkyl, C_2 - C_8 alkenyl, C_2 - C_8 alkynyl, phenyl, aryl, C_1 - C_8 alkylaryl; R^4 and R^5 are each independently selected from hydrogen, C_1 - C_8 alkyl, C_2 - C_8 alkenyl, C_1 - C_8 alkoxy, halo, C_1 - C_8 haloalkyl, phenyl, aryl, C_1 - C_8 alkylaryl,

 $(CH_2)_mNSO_2C_1$ - C_8 alkyl, $(CH_2)_mNSO_2$ phenyl, $(CH_2)_mNSO_2$ aryl, - $C(O)C_1$ - C_8 alkyl, and - $C(O)OC_1$ - C_8 alkyl; wherein each R^4 and R^5 is attached to its respective ring only at carbon atoms, and wherein y is 0, 1, 2, or 3; and wherein z is 0, 1, 2, or 3;

 R^6 and R^7 are each independently selected from hydrogen, C_1 - C_8 alkyl, C_2 - C_8 alkenyl, C_2 - C_8 alkynyl, $C(O)C_1$ - C_8 alkyl, hydroxy, C_1 - C_8 alkoxy, aryl, C_1 - C_8 alkylaryl, C_3 - C_8 cycloalkyl, C_1 - C_8 alkylheterocyclic, C_1 - C_{10} alkylcycloalkyl, -NHC₁- C_8 alkyl, $(CH_2)_nC(O)CR^8$, $(CH_2)_nC(O)NR^8R^8$, and $(CH_2)_mNSO_2R^8$; wherein each of the alkyl, alkenyl, cycloalkyl, heterocyclic, and aryl groups is optionally substituted with one to 3 groups independently selected from C_1 - C_8 alkyl, C_2 - C_8 alkenyl, phenyl, and C_1 - C_8 alkylaryl; and wherein R^6 and R^7 optionally combine together to form a 5, 6, or 7-membered nitrogen-containing heterocycle with E and W; and wherein the nitrogen containing heterocycle is optionally substituted with 1-2 groups independently selected from the group consisting of oxo, amino, C_1 - C_8 alkyl, C_2 - C_8 alkenyl, C_2 - C_8 alkynyl, phenyl, C_1 - C_8 alkylaryl, $C(O)C_1$ - C_8 alkyl, $C(O)C_1$ - C_8 alkyl, hydroxy, C_1 - C_8 alkoxy,

 R^8 is hydrogen, C_1 - C_8 alkyl, C_2 - C_8 alkenyl, C_5 - C_8 alkylaryl, $(CH_2)_mNSO_2C_1$ - C_8 alkyl, $(CH_2)_mNSO_2$ aryl, $-C(O)C_1$ - C_8 alkyl, or $-C(O)OC_1$ - C_8 alkyl; n is 0, 1, 2, or 3; and m is 1, 2 or 3;

halo, and haloalkyl;

or a pharmaceutically acceptable salt, solvate, enantiomer, racemate, diastereomers or mixtures thereof.

- 2. The compound according to claim 1 wherein the A-ring is selected from the group consisting of phenyl, pyridine, pyrimidine, pyrazine, and pyridazine.
- 3. A compound according to Claim 1 wherein the B-ring is selected from the group consisting of phenyl, pyridine, pyrimidine, pyrazine, and pyridazine.

WO 2005/066164 PCT/US2004/039766

56

- 4. A compound according to Claim 1 wherein the A-ring is phenyl and the B ring is pyridinyl.
- 5. A compound according to Claim 1 wherein the A ring is phenyl and the B ring is pyrazinyl.
- 6. A compound according to Claim 1 wherein the A-ring is pyridinyl and the B-ring is phenyl.
 - 7. A compound according to Claim 1 wherein both rings A and B are phenyl.
 - 8. A compound according to Claim 1 wherein E is a nitrogen atom.
- 9. A compound according to Claim 1 wherein y is 0, 1, or 2, and R⁴ is independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, methoxy, ethoxy, methyl, ethyl, isopropyl, trifluoromethyl, trifluoromethoxy, phenyl, and benzyl.
- 10. A compound according to Claim 1 wherein z is 0, 1, or 2, and R⁵ is independently selected from the group consisting of hydrogen, fluoro, chloro, bromo, methoxy, ethoxy, methyl, ethyl, isopropyl, trifluoromethyl, trifluoromethoxy, phenyl, and benzyl.
- 11. A compound according to Claim 1 wherein R¹ and R² are each independently selected from the group consisting of hydrogen, methyl, ethyl, propyl, isopropyl, phenyl,

WO 2005/066164 PCT/US2004/039766

$$(CH_{2})_{n}$$

$$(CH_$$

and wherein n is 1, 2, or 3.

- 12. A compound according to Claim 1 wherein R⁶ and R⁷ are each independently selected from the group consisting of hydrogen, methyl, ethyl, propyl, isopropyl, and phenyl.
 - 13. A compound according to Claim 1 wherein v is 1 or 2.
- 14. A compound according to Claims 1 wherein v is 2, m is 1, n is 1, y is 0 or 1 and z is 0 or 1.
- 15. A compound selected from the group consisting of:
 6-{4-[(3-Methyl-butylamino)-methyl]-phenoxy}-nicotinimidic acid ethyl ester

N-Hydroxy-6-{4-[(3-methyl-butylamino)-methyl]-phenoxy}-nicotinamidine

6-{4-[(3-Methyl-butylamino)-methyl]-phenoxy}-nicotinamidine

 $\{4-[5-(4,5-Dihydro-1H-imidazol-2-yl)-pyridin-2-yloxy]-benzyl\}-(3-methyl-butyl)-amine$

{4-[5-(4,5-Dihydro-1H-imidazol-2-yl)-pyridin-2-yloxy]-benzyl}-(2-thiophen-2ylethyl)amine

(3-Methyl-butyl)-{4-[5-(1,4,5,6-tetrahydro-2-yl)-pyridin-2-yloxy]-benzyl}-amine

N-Cyano-6-{4-[(3-methyl-butylamino)-methyl]-phenoxy}-nicotinamidine

(3-Methyl-butyl)-{4-[5-(2H-tetrazol-5-yl)-pyridin-2-yloxy]-benzyl}-amine

{4-[5-(1H-Imidazol-2-yl)-pyridin-2-yloxy]-benzyl}-(3-methyl-butyl)-amine

N-(2,2-Dimethoxy-ethyl)-6-{4-[(3-methyl-butylamino)-methyl]-phenoxy}-nicotinamidine

and a pharmaceutically acceptable salt, solvate, enantiomer, diastereomer and diastereomeric mixture thereof.

- 16. A compound according to Claim 1 wherein the pharmaceutically acceptable salt is the hydrochloric acid salt, the methanesulfonic acid salt, hydrobromide salt, the bisulfate salt or tartaric acid salt.
- 17. A pharmaceutical composition comprising a therapeutically effective amount of a compound according to Claim 1 in association with a carrier, diluent and/or excipient.
- 18. A pharmaceutical composition comprising a therapeutically effective amount of a compound according to Claim 15 in association with a carrier, diluent and/or excipient.
- 19. A method for blocking a mu, kappa, delta or receptor combination (heterodimer) thereof in mammals comprising administering to a mammal requiring blocking of a mu, kappa, delta or receptor combination (heterodimer) thereof, a receptor blocking dose of a compound according to Claim 1 or a pharmaceutically acceptable salt, enantiomer, racemate, mixture of diastereomers, or solvate thereof.
- 20. A method of treating and/or preventing obesity and Related Diseases comprising administering a therapeutically effective amount of a compound of formula I to a patient in need thereof.
- 21. A method of treating and/or preventing diseases related to obesity including irritable bowel syndrome, nausea, vomiting, obesity-related depression, obesity-related anxiety, smoking and alcohol addiction, sexual dysfunction, substance abuse, drug overdose, addictive behavior disorders, compulsive behaviors, metabolic diseases, and stroke, comprising administering a therapeutically effective amount of a compound of formula I.
- 22. A method according to Claim 20 wherein the Related Diseases is selected from the group consisting of diabetes, diabetic complications, diabetic retinopathy,

WO 2005/066164 PCT/US2004/039766

61

atherosclerosis, hyperlipidemia, hypertriglycemia, hyperglycemia, and hyperlipoproteinemia.

- 23. A method of suppressing appetite in a patient in need thereof, comprising administering a therapeutically effective amount of a compound of formula I.
- 24. Use of a compound according to Claim 1 for the manufactrure of a medicament for the treatment of obesity and Ralted Diseases.
- 25. Use of a compound according to Claim 15 for the treatment of weight loss comprising administering an effective dose of said compound to a person in need thereof.